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ABSTRACT

This collection of environmental education activities focuses on the school and its surroundings. The activities reinforce the concept that the immediate school environment contains elements that are common to the structure of the whole man-made environment. The activities provide ideas for using the school building, school grounds, and surrounding community for exploring, understanding, and communicating the various components of the man-made environment. The guide contains eight topics, such as: Getting to School: People/Materials and Products; Land and Room Use: School Building/Schoolyard/Surrounding Community; Life Support Systems; and Parallels Between the Natural and Man-Made Environment. Under each topic is listed a number of corresponding activities. The activities represent an interdisciplinary approach to environmental education and include problem solving, discussion, photography, inquiry, and measurement. (TK)

SUGGESTED ACTIVITIES USING THE SCHOOL AND ITS SURROUNDINGS AS A RESOURCE FOR ENVIRONMENTAL EDUCATION

It is likely that many public school students will continue to spend much of their "school time" in school buildings and their immediate environs. This microcosmic community contains elements which are common to the structure of the whole man-made environment. It is in itself a rich resource which needs exploration and unfolding. These are some ideas for activities which suggest ways of using the school and its surroundings to learn about the man-made environment. Perhaps these ideas will suggest others which are appropriate and useful where you are - other ideas for using your school building, grounds and surrounding community for exploring, understanding and communicating about the man-made environment.

These activities were developed by the Group for Environmental Education for a publication entitled "Something More You Can Learn From Your Schoolhouse" fully sponsored by EFL, Educational Facilities Laboratories Incorporated, and to be published by them in late 1972.

gee!
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TABLE OF CONTENTS

A. Getting to School: People

1. Have everyone take a photograph of where he/she is every minute on the way to school (or every five minutes depending on the length of time it takes to get there). When all the photos are in, mount them on a large grid (one row for each person) to compare the different environments they all travel through. Annotate it with information about noise, speed, sights, light, temperature, safety. If you really get ambitious, make it a slide show.

2. What is the "environmental envelope" you pass through on your way to school? Observe it carefully and keep a log of what you see and hear, how you move through it (bus, walking, car), where you go fast or slow, what you see when you go fast, what you see when you go slow, where there is natural and artificial light, where there are many and few people.

3. Draw maps of routes to school which describe visually:

   a. speed and means of transportation
   b. time
   c. comfort
   d. light
   e. sights and sounds

4. Students can use pedometers to measure the distance between school and home. Compare to the distance they walk during the day in school.

5. Visually compare the alternate routes to school of several students, teachers, the principal, a delivery man. Compare the "plus and minus" points of different modes of transportation - walking, bicycle, car, bus, subway. Discuss health, efficiency, speed, pollution, traffic.

Getting to School: Materials & Products

6. Trace some items you ate for lunch from their sources - where they were grown originally (if vegetative) or what animals they came from, how they were processed, packaged, distributed, delivered to your school, how they were prepared and served to you.

7. Trace your pencils and paper from their source materials (trees) through manufacture, packaging, delivery to warehouse and delivery to your school. Learn about the requisitioning process and all the channels one must go through to get a pencil or piece of paper to your desk. Trace these materials from your desk to their final disposal.

B. A Day In the Life of People and Spaces

In chart, list, or photographic form record the events which occur in a "day in the life of" -

1. Your schoolyard. What activities go on there? When? For how long? How many people are involved?

2. Four different people in your school - a student, a teacher, the principal, a custodian, etc.

3. Four different people in the community working at different occupations - a housewife, a storekeeper, a policeman, a factory worker, a doctor, a cab driver, etc.

4. Photograph your own street every hour for a full day and evening to see what changes take place over 24 hours.

5. Photograph a room, such as the lunchroom, gym, classroom, etc., every thirty minutes to see what changes take place during one full school day.

6. Make a photographic record of your own daily schedule. Take a picture every hour and note what you were doing. Compare your schedule with those of other students.

C. Land and Room Use: School Building

1. Zoning is the system for regulating the uses of land. What particular things do zoning ordinances regulate? Find out about the different zoning categories. How is the area around your school zoned? (Residential, commercial, industrial)

2. How is the area in your school zoned? Is your school building "zoned" for language, academic courses, commercial/vocational, physical education, art, music, lunch, or do these activities take place in a variety of places? What spaces could become flexible (used for more than one activity) spaces? How? (Furniture arrangement is one way.) Figure out some of the reasons why certain areas are "zoned" only for particular/specialized activities. Make a color-coded room-use map of your school. (The school's plans would be very helpful if they are available.)

3. Calculate the amount of unused and unassigned space (toilets, corridors, stairs, closets, etc.) inside your school building. Do the same for the outside spaces. What percentage of the total space is unused?

4. Calculate the hours per day, per month, per year the different school rooms are used and the time the school building itself is in use. When and for how long is it unused? Do the same for a neighborhood, theater and church. Could you schedule other activities in your school, the theater, the church to utilize space better?

The Schoolyard or School Grounds

5. Name all the activities which go on on your school's grounds. What areas do you use for each and why? What else could you use? Name other spaces where the same activities go on in the city.

6. What percentage of your schoolyard or school grounds are used for movement - walking, driving, deliveries? If you could change the movement areas to create more space for free movement and recreation what and how would you change it?

7. What is the topography of your school site? What is the highest point? The lowest point? In what directions does the ground slope? (Use U.S. Coast and Geodetic Survey Maps or City Street maps and building drawings.)

8. Make a land use map of your school grounds showing play areas, parking and movement areas.

9. How would you replan your schoolyard to make it a better community space? Where would you plant trees, pave areas, provide equipment, paint, etc.?

10. Describe the performance characteristics for different kinds of recreation in simple charts and diagrams. A ball game requires a certain area, specific equipment, safety conditions. Throwing a ball is a linear activity as is bike riding, but bike riding can close on itself and also define an area. Who performs the different activities and how many people are involved? Then redesign your own schoolyard or school grounds for the performances you'd like to see going on there.

11. Calculate the amount of water that falls on your school's yard in a year - if 1" falls over one acre, how much water does that mean? What ground covers absorb it (where does it go?) and where does it run off? Locate the sewers and find out (from the Water Department) the capacity of the sewers. Is there sufficient provision made for run off water? How must non-absorbent surfaces be paved to allow for water to run off?

12. What kinds of vegetation grow on your school's grounds and where? How old are they? Are they plants or trees which only grow in the city or in your particular habitat? Are they annual or perennial?

What grows through cracks in macadam?

The Surrounding Community

13. Take pictures of the surrounding community all 360 degrees around your school. Take pictures of your school on all sides from the surrounding community. What kind of visual neighbor does each make?

14. Relate some experiences you have had with neighbors. What in your experience make good and bad neighbors? Who are all your neighbors in a day - what makes a good "neighbor" in a class? In an office? In a neighborhood? Buildings and open spaces can be neighbors as well as people. What criteria would you set for your own neighbors - people and spaces?

15. Make a resource book of your school's neighboring community - the people, places and processes (activities) that you could learn from and about. Suggestions:

    a. Make a map
    b. Do interviews
    c. Chart who lives and works where
    d. Identify the structures and spaces in the neighboring community (Sanborn maps are useful if available - see your City Planning Commission for maps)
    e. Identify some of the activities that go on. Where else might you find them?

16. What can you see and learn, in a 15 minute radius from your school building, about the surrounding community? Have several groups take 15 minute walks in different directions from your school and describe what they see and find out about - in maps, photographs, drawings, interviews, stories, verbal description. How far from the school do you get?

17. Do a guide book on your school and its neighborhood. Tell about things of interest - where to get a hamburger, who hangs where, local movie schedules, local sports events. What you can and can't do in the area. Transportation.

18. Imagine you are visiting your own city or community for one day and see nothing but the street. What can you find out about? What kinds of information can you get on the street? Who works on the street? How do people use the street differently?

19. Chart the growth, change, and development of the land, streets, population, businesses, and buildings in your school's neighborhood in visual or story form.

20. Discuss ideas to improve school/community relations. What would help your school become a better neighbor and/or more involved in the community:

    a. Invite merchants and residents

of the neighborhood in for a community day to show and explain what goes on inside and around your school.

b. Investigate alternative ways of disposing of waste to keep the school free of trash.

c. Provide information.

d. Develop some ideas to make the school more useful to the community.

D. Information and Communication

1. Organize the information on your school's bulletin board in a more meaningful way, perhaps by day, or subject or type of event (entertainment, school notices, district information, job and travel, school opportunities).

2. Are there any marketing ideas which could make your library work more efficiently - advertising, display, "specials", contests, visibility of books, movement throughout the whole place, check out and return, location, classification.

E. Population and Statistics

1. Compile statistics on your school's neighborhood: its population, the number of buildings, the types of buildings according to use, area by use, etc. How do the statistics vary over, say, a 50 year period?

2. Compile statistics on your school, its population, the number of rooms and spaces by type and use, etc. In what ways was your school designed to accommodate its population?

F. Area, Dimension and Human Scale

1. Paint a diagram (full size) of an average size student showing his dimensions in feet and inches. Then compare this figure to:

   a. the size of doors
   b. the height of the ceiling
   c. furniture
   d. the window sill

2. Discuss the space people need to stay healthy, mentally and physically. This field is called "proximics."

3. Compare the floor area a person needs to stand, sit, kneel, lie down.

4. What are the required minimum turning radii of buses, cars, bicycles, a person, a dog, a cat?

5. What are some spaces (churches, banks, museums, many public buildings) which are built very large - larger than human scale? Why do you think they were designed "larger than life"?

6. Compare the size (in area) of your house or apartment with your school. How many houses would fit in your

school if area were the only measure?

7. If you decided to convert your school into an apartment building, what would you need to provide - think about privacy, comfort, light, utilities.

8. Compare the space a student has in a classroom to the space he has in his own bedroom.

9. Compare the area of an elementary school to that of a junior high school. What is the difference in numbers of children attending? What is the difference in the kind and number of different types of spaces, facilities?

10. Using the floor plans of your school or through actual measurement, calculate:

    a. How big your c' sroom is
    b. How big a "room" the corridor really is
    c. How many classrooms would fit in the total area of all your corridors
    d. How big your school is
    e. How big is a football field? Relate your school to a football field in area.
    f. How long is your corridor (total length on all floors) in city blocks, feet, miles?

G. Life Support Systems

1. Make a chart of services to different rooms in your school. Which get water, electricity, telephone, gas, intercom? Why?

2. Diagram the plumbing and electrical systems in a room of your school.

3. Calculate the amount of water and power used per person, per school, per community. The average family uses 80-90 cubic feet of water a week.

4. Calculate the amount of waste you produce in a week, in a year. Calculate the amount of waste (in trash and garbage) your school produces in a week, a year. Who picks it up? When? How often? Where does it go? What is recycled? What is not? How is it disposed? What are the uses for dry waste? Wet waste?

5. Interview/talk to the garbage man and the trash man (garbage and trash are considered different commodities and are handled by different personnel) to find out what happens to the garbage and trash your school collectively produces. Where does it go? How is it used? What is the difference between garbage and trash?

6. What are the requirements in a classroom for life support? How is each of these requirements fulfilled? Are there other ways? Make sure

to include privacy and security along with comfort, air, water, heat, etc.

7. If you had pets in class - goldfish, amphibians, mice - where would you put them? Why? What kind of environment do they need?

8. Light is measured in units called footcandles (a footcandle is the amount of light a candle throws on an object one foot away, 10 footcandles is the amount of light 10 candles throw on a surface one foot away.) A 75 watt bulb provides 30 footcandles of light at a distance of 3 feet and 20 footcandles at a distance of 6 feet.

9. Measure the light at different locations in your school (use a light meter or similar device) during different times of day and compare to the light of:

   a. a subway
   b. the street
   c. light at other times of day
   d. an office

10. What rooms have windows and which don't? Why?

H. Parallels Between the Natural and Man-Made Environment

Many activities can be structured around the parallels between the natural environment and the man-made environment. We understand new information based on things we already understand. By revealing the parallels which exist between the man-made and the natural environment, unfamiliar phenomena and performances in each can become comprehensible.

A visitor from the city to a wilderness park should be able to understand the natural phenomena which exist there in relation to what he knows about his own urban environment. Conversely the rural visitor to an urban area should be able to understand urban dynamics and performances in relation to the more familiar natural cycles of his own experience.

A series of activities showing the relationships between the performances and physical environments of the country and the city could make these different environments come alive and more meaningful.

1. Spectrum: Describe with photos, drawings, essays, charts, the spectrum (or range) of the environments which exist in:

   a. wilderness
   b. country
   c. rural
   d. suburb
   e. slurb
   f. city
   g. community
   h. schoolyard
   i. school

2. Levels - a cross section of the environment. Compare the performances that occur on or within the three levels of the man-made environment and the natural environment:

   a. below ground level
   b. at ground level
   c. above ground level

   For instance, there is a whole range of performances based on access mobility and gravity that can occur only at ground level, whereas the distribution of water, minerals, tree roots and even the homes for certain animals, as well as subways, electricity and sewers, occur below grade.

3. Life Support Systems

   a. What are the life support systems present in both the natural environment and in man's intensely developed urban areas. Describe the necessary systems of water, air, power (sunlight, or electricity or both) and show the similarities and differences and the problems that occur when any of these life support systems are misused or abused.

4. Population, Statistics and the Numbers of Things

   Describe the meaning of statistics as they affect physical environments and point up the diversity in in numbers of things in the natural environment as opposed to the city. Explore the numbers of people, cars, houses and man-made objects that occur in an area like a city block of a census tract and similarly show the numbers of trees, animals, insects, etc., that occur in an acre or even a cubic foot of soil.

5. Groups

   What are the groupings and communities in the man-made environment and in the natural environment? In the natural environment are lone animals, families of animals, herds, and hives. In the man-made environment are individuals, families, blocks, neighborhoods, school districts, business staffs, police districts, congressional districts. What is the relationship between these social groups and groupings and the physical environment?

6. Movement

   Describe movement as the chief organizer of our man-made environment. Movement of people, goods, vehicles, water and messages. In the natural environment the movement systems are less precisely manifested, but still exist in the form of migration routes, streams, forest paths, tunnels, etc.

7. Material Cycles

   What are the numerous clear

material cycles that occur in the natural environment in comparison with the fewer that occur in the urban environment. In the forest the leaf drops and returns to the soil. In the city water is re-used and cars are melted down. Point up much of what is not cycled in the city in comparison with the "naturalness" and efficiency of cycles in our natural environment.

8. Time and Use - Daily, Seasonal

What effect does time - the seasons of the year the the times of the day have on the use of our environment and what man does to make every day the same throughout the year, and what does nature do in its acceptance of time and seasonal changes.

9. Land Use - Lard Use Patterns and Development

How has land use and land use patterns and their evolution and development as well as their legalized existence based on zoning affected the man-made and natural environment? The natural environment causes certain land use patterns based on sun, slope, soil, climate, etc. Man's effect on the use of the land is based on a plethora of causes, effects and the subsequent formalizations of these.

10. Ownership of Land and Services

Who owns the land in the city? Who owns the National Parks, the country, the farms, the towns and the cities? How much of the land and services are public and how much is private? Discuss the fact that on the average, 50% of the land in the urban city is publicly owned and clarify the responsibilities that go with this ownership.